

The University of Chicago

COMPARATIVE SUCCESS OF
PUBLIC AND PRIVATE SECONDARY
SCHOOL GRADUATES IN THE
UNIVERSITY OF CHICAGO

A PART OF A DISSERTATION SUBMITTED TO
THE FACULTY OF THE DIVISION OF THE
SOCIAL SCIENCES IN CANDIDACY FOR THE
DEGREE OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF EDUCATION
AUGUST, 1941

By
ELVIRA JOHANNA GELLENTHIEN

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PREFATORY NOTE

In this "essential portion" of the dissertation of the same title, Chapters I through IV are abstracts of the chapters in the dissertation bearing the same numbers. Chapters V and VI are reproduced in their entirety.



CHAPTER I

INTRODUCTION

While private secondary schools no longer assume the important rôle in our educational system that they did in the past,¹ they are of sufficient importance to provoke controversial discussions among educational leaders. Educators agree that private schools made significant contributions in the past, but disagree in the rôle that private schools should play in the future.²

The main objective of the majority of private secondary schools is asserted to be that of preparing students for college work.³ Although college preparation is also an objective of public high schools, many high schools have other functions as well. L. V. Koos, for example, found that secondary schools have four principal aims, namely: civic-social-moral, recreational and aesthetic participation, occupational efficiency (this term includes preparation for higher institutions), and physical efficiency.⁴ Moreover, Koos reported a study of the college-preparatory function of the public high schools of Minnesota and concluded that the public high school of Minnesota changed during

^{1a}Ellwood P. Cubberley, The History of Education, pp. 362, 656, 697-98. Boston: Houghton Mifflin Co., 1920.

^bLeonard V. Koos, Private and Public Secondary Education, p. 2. Chicago: University of Chicago Press, 1931.

^{2a}Porter Sargent, A Handbook of Private Schools, pp. 33-34. Boston: Porter Sargent, 1937.

^bG. A. Boyce, "A Critique of Private Schools," Progressive Education, VII (November, 1930), 339.

^cThomas H. Briggs, The Great Investment: Secondary Education in a Democracy, pp. 86-95. Cambridge: Harvard University Press, 1930.

^dBurton P. Fowler, "What the Private Secondary Schools Are Contributing to American Life Today," Bulletin of the Department of Secondary School Principals of the National Educational Association, No. 55 (March, 1935), pp. 42, 55.

³J. L. Sherman, "Can the Private Secondary School Justify Its Existence," School and Society, XLI (April 6, 1935), 463-65.

⁴Leonard V. Koos, The American Secondary School, pp. 152-55. Boston: Ginn and Co., 1927.

the years 1890 to 1918 from an institution which was mainly college-preparatory in function to one which was mainly non-college-preparatory.¹

Purposes of the Study

The principal purpose of this study is to compare the academic success of public and private secondary school graduates in the University of Chicago.

Since the college-preparatory function is alleged to be emphasized to a greater extent in the private than in the public school, one would be justified in assuming that, other things being equal, private school students would be academically more successful in their subsequent college work than public school students.

The study will include two types of investigation. One section will consist of an analysis of the entire student body entering the University during the years 1931 to 1935. The other section will be a more intensive investigation of the college records of matched groups of public and of private school students so that direct comparisons between them can be made.

The purposes of the study of the entire student body are as follows: (1) to determine the high school source of students; (2) to determine the psychological scores, the personality ratings, the socio-economic status, and the age at entrance to the College of the students from the different types of schools; (3) to determine the relationship of the foregoing factors to the College success of students. For this section of the study public schools were classified according to size--large (with student enrollments of 3,000 or over), medium (1,000 to 3,000 students), and small (fewer than 1,000 students)--and private schools were divided into types--University of Chicago High School, independent (or non-sectarian), Roman Catholic, and other denominational.

The purposes of the study of matched public and private school students are: (1) to compare the high school background of public and private school students; (2) to determine whether there are significant differences in the scholastic achievement of the two groups of students; (3) to ascertain the rate of academic progress of public and private school students; (4) to determine

¹Ibid., p. 161.

whether there are differences in the specialization of students from the two types of schools.

Methods of Procedure

The study of the entire student body included students entering the College of the University of Chicago as Freshmen during the years 1931 to 1935.

Sample populations were used for the more intensive study of the public and the private school groups. The following bases were employed: sex, ratings on the Thurstone Personality Schedule, and percentile rank on the Psychological Examination of the American Council on Education. By matching each private school student 473 usable pairs were found. Since the Personality Schedule was not administered after 1934, the sample populations consist only of students who entered the College during the years 1931 to 1934.

The record of every student was transcribed on large tabulating sheets by the investigators. When a random sampling of records were rechecked and no significant errors were found, it was assumed that the recordings were accurate.

In the study the usual statistical devices were utilized, such as mean, median, correlation, standard deviation, and quartile deviation.

Sources

The following offices of the University supplied the material for this investigation: the Bureau of Records, the Board of Examinations, the Office of Admissions, and the Office of the Dean of Students.

Limitations of the Study

Since a number of records were not available, the total number of students in some of the tables will not check with that of the other tables.

The efficiency of the secondary schools is, in this study, measured by the subsequent academic success of their students in college. Academic success or academic failure is measured by college marks. This raises the following question: Is one justified in presuming that the efficiency of secondary schools can be tested by relying on the college marks of their students?

The writer feels justified in assuming this premise. While marks are measures set up arbitrarily by our educational agencies, they are, up to the present time, the only available means of determining a student's success in academic work. Therefore, in this study academic success is assumed to be achievement which is measured by college marks.

CHAPTER II

CHARACTERISTICS OF THE NEW PLAN OF THE UNIVERSITY OF CHICAGO

The University of Chicago now includes the following units: the College, the Division of the Biological Sciences, the Division of the Humanities, the Division of the Physical Sciences, and the Division of the Social Sciences. The Professional Schools are also integral parts of the University.

The functions of the College are twofold: (1) to provide general education and (2) to provide opportunities for preparation in the fields in which specialization is to be continued.¹ Students complete the work of the College by passing the following seven comprehensive examinations: one examination in each of the four fields of knowledge--Biological Science, Humanities, Physical Science, and Social Science--two sequence examinations, and an English Qualifying Examination.² The only additional requirement now imposed upon students is that they spend at least one academic year (three quarters) in residence.

After the requirements of the College have been completed, students may register in one of the Divisions or in one of the following Professional Schools: School of Business, Law School, School of Social Service Administration, and Divinity School.

Each Division has specific requirements for the Bachelor's degree. However, certain requirements are common to the four Divisions. The requirements of every Division include the following: the program of work of each Division is centered about a field of specialization, with additional work in related departments; a number of electives must be passed; one academic year of

¹Floyd W. Reeves, W. E. Peik, and John D. Russell, Instructional Problems in the University, p. 113. The University of Chicago Survey, Vol. IV. Chicago: University of Chicago Press, 1933.

²Announcements, University of Chicago, XXXIX (March 15, 1939), 43-45. Chicago: University of Chicago Press.

residence is required.¹ The quality of work in the Humanities and in the Social Science Division is measured not by course examinations but by comprehensive examinations.² The quality of work in the Biological Science Division and in the Physical Science Division is measured either by course examinations or by comprehensive examinations.³

The residence and examination requirements of the four Professional Schools which base their programs on the work of the College for the Bachelor's degree are in general similar to the requirements of the Divisions.

Two innovating features of the New Plan are the abandonment of course credits, and the abandonment of enforced attendance at classes. The amount of time necessary to complete a curriculum depends upon each student's previous preparation and upon his ability to do the work of the College and of the Divisions or the Professional Schools.

¹Chauncey S. Boucher and A. J. Brumbaugh, The Chicago College Plan, p. 32. 2d ed. revised. Chicago: University of Chicago Press, 1940.

²Announcements, University of Chicago, XXXIV (April 10, 1934), 123, 273. Chicago: University of Chicago Press.

³Announcements, University of Chicago, XXXVIII (March 15, 1938), 242-43. Chicago: University of Chicago Press.

CHAPTER III

CHARACTERISTICS AND COLLEGE SUCCESS OF THE ENTIRE STUDENT BODY

This chapter will present some of the characteristics and the relation of these characteristics to the College success of the entire student population entering the College during the years 1931 to 1935.

High School Source of Students

The numbers and proportions of students entering the College as Freshmen who received their secondary school training in the various types of schools are presented in Table 1. According to this table the majority of students received their secondary school training in public schools--80.60 per cent, with 52.19 per cent of the students coming from large public schools. Since the University of Chicago is located in a large metropolitan city, where large public schools are relatively common, it is natural that students from these schools would be drawn to the University.

Inspection of Table 1 also shows that the University recruits a somewhat larger proportion of students from independent schools--8.25 per cent--and from University High School--6.44 per cent--than from Catholic or from other denominational schools.

College Achievement of Students from the Seven Types of Secondary Schools

According to the proportions of students from the various types of schools completing the work of the College, i.e., successfully passing the seven comprehensive examinations, the achievement of public and of private school students is similar. Comparison of public and private school men shows that 64.15 per cent of the public and 59.27 per cent of the private school men earned certificates. Likewise, 51.77 per cent of the public and 47.95 per cent of the private school women earned certificates. The proportion of public school students completing their College

work is 59.23 per cent and for private school students it is 54.67 per cent. While the probable errors of the differences indicate that the differences are not significant, public school students tend to succeed as well as, if not better than, private school students.

TABLE 1

NUMBERS AND PERCENTAGES OF STUDENTS ENTERING THE COLLEGE OF THE UNIVERSITY OF CHICAGO IN THE YEARS 1931-35, RECEIVING THEIR SECONDARY SCHOOL TRAINING IN PUBLIC SCHOOLS OF THREE SIZES, AND IN PRIVATE SCHOOLS OF FOUR TYPES

High School	Men		Women		Total	
	Num- ber	Per- centage	Num- ber	Per- centage	Num- ber	Per- centage
<u>Public</u>						
Large	929	30.08	683	22.11	1,612	52.19
Medium	348	11.28	197	6.38	545	17.66
Small	223	7.22	109	3.53	332	10.75
Combined	1,500	48.58	989	32.02	2,489	80.60
<u>Private</u>						
University High School	118	3.82	81	2.62	199	6.44
Independent	158	5.11	97	3.14	255	8.25
Catholic	49	1.59	44	1.42	93	3.01
Other denomina- tional	31	1.00	22	.71	53	1.72
Combined	356	11.53	244	7.90	600	19.43
Total students .	1,856	60.10	1,233	39.91	3,089	100.01

Approximately equal proportions of students from large public (60.33 per cent), from medium public (60.32 per cent), and from small public schools (52.11 per cent) completed their College work.

Students from University High School (72.36 per cent), however, are more successful in completing the work of the College than are students from independent schools (51.76 per cent), from Catholic schools (36.56 per cent), or from other denominational schools (33.96 per cent).

By and large, one may conclude that students from Univer-

sity High School are more successful in completing the work of the College than are students from the other types of secondary schools. Next in order are students from the three types of public schools and from independent schools. Least successful are students from the sectarian schools.

Psychological Scores

Every Freshman is required to take the Psychological Examination of the American Council on Education. The mean raw scores on the Psychological Examination of students from public and from private schools are given in Table 2. According to this table the scholastic aptitude of public and of private school students is similar. While private school students received a mean raw score of 219.93 points, public school students received a score of 218.57 points. The difference between these scores is not statistically significant.

TABLE 2

MEANS OF RAW SCORES ON THE AMERICAN COUNCIL PSYCHOLOGICAL EXAMINATION FOR PUBLIC AND PRIVATE SCHOOL STUDENTS ENTERING THE UNIVERSITY DURING THE YEARS 1931-35

	Mean	S.D.
<u>Public</u>		
Large	214.94	54.22
Medium	229.27	49.53
Small	218.63	54.49
Combined	218.57	53.58
<u>Private</u>		
University High School	225.42	49.13
Independent	220.70	52.33
Catholic	204.16	58.47
Other denominational .	223.33	50.45
Combined	219.93	52.62
Total students ..	218.80	53.40

Students from University High School received a higher average score (225.42 points) than did students from the other types of private schools. Catholic students, on the other hand, received the lowest score (204.16 points).

The mean psychological scores of students from large public schools (214.94 points) and from small public schools (218.63 points) are similar. Students from medium public schools, however, received a higher score (229.27 points) than did students from the other types of public schools.

Relation of psychological scores to achievement of students.--According to Table 3 larger proportions of students who received high percentile ranks on the psychological examination than of students who received low percentile ranks qualified for their certificates. For example, in the lowest percentile rank group (0-9.95), 35.05 per cent of the students earned certificates, whereas 93.33 per cent of the students in the highest (the 100th) percentile rank completed their College work.

When public and private school students are compared, private school students are superior to public school students in only two percentile rank groups (9.95-19.95 and 100). In the 9.95-19.95 group the difference between the percentages of private and of public school students earning certificates is 3.56 per cent and in the 100th percentile it is 8.33 per cent. In the remaining nine percentile rank groups the percentages of public school students qualifying for certificates are either higher than, or are approximately equal to, the percentages for private school students.

Personality Ratings

Another test administered to all entering students up to 1934 was the Thurstone Personality Schedule. This schedule is reported as a letter rating. The ratings are interpreted as follows: "A" is extremely well adjusted, "B" is well adjusted, "C" is average, "D" is emotionally maladjusted, and "E" is in need of psychiatric advice.

The numbers and percentages of public and of private school students included in the five personality ratings (Table 4) indicate that the emotional make-up of public and of private school students is similar. Moreover, there are no essential differences in the proportions of students from the various types

TABLE 3

PUBLIC AND PRIVATE SECONDARY SCHOOL STUDENTS GROUPED ACCORDING TO PERCENTILE RANK ON THE AMERICAN COUNCIL EXAMINATION, NUMBER AND PERCENTAGE IN EACH RANK EARNING COLLEGE CERTIFICATES

Percentile Rank	Public School			Private School			Total	
	Total in Rank	Earning Certificates		Total in Rank	Earning Certificates		Total in Rank	Earning Certificates
		Number	Percentage		Number	Percentage		
0- 9.95 ..	246 ^b	89	36.18	45	13	28.89	291 ^b	102
9.95-19.95 ..	241 ^b	99	41.08	56	25	44.64	297 ^b	124
19.95-29.95 ..	247 ^b	123	49.80	58	16	27.59	305 ^b	139
29.95-39.95 ..	266 ^b	142	53.38	74	37	50.00	340 ^b	179
39.95-49.95 ..	230	133	57.83	52	29	55.77	282	162
49.95-59.95 ..	224 ^c	141	62.95	58	27	46.55	282	168
59.95-69.95 ..	273 ^c	170	62.27	70	44	62.86	343 ^c	214
69.95-79.95 ..	241 ^c	176	73.03	71	51	71.83	312 ^c	227
79.95-89.95 ..	251 ^b	185	73.71	56	37	66.07	307 ^b	222
89.95-99.95 ..	251	201	80.08	57	46	80.70	308	247
100 ^a	12	11	91.67	3	3	100.00	15	14
Total	2,482 ^d	1,470	59.23	600	328	54.67	3,082 ^d	1,798
								58.34

^aThis represents those students with a percentile rank of exactly 100.

^bOne student transferred to another institution for his College work.

^cTwo students transferred to other institutions for their College work.

^dSeven students transferred to other institutions for their College work.

TABLE 4

NUMBERS AND PERCENTAGES OF PUBLIC AND PRIVATE SECONDARY SCHOOL STUDENTS INCLUDED
IN FIVE RATINGS ACCORDING TO THE THURSTONE "PERSONALITY SCHEDULE"

Public School Students										
Personality Rating	Large		Medium		Small		Total		Number	Percentage
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage		
A	211	16.08	61	14.02	42	15.38	314	15.54		
B	382	29.12	118	27.13	73	26.74	573	28.37		
C	567	43.22	201	46.20	126	46.15	894	44.26		
D	121	9.22	36	8.28	19	6.97	176	8.71		
E	31	2.36	19	4.37	13	4.76	63	3.12		
Total ..	1,312	100.00	435	100.00	273	100.00	2,020	100.00		

Private School Students										
Personality Rating	University High School		Independent		Catholic		Other Denominational		Total	
	Num- ber	Per- centage	Num- ber	Per- centage	Num- ber	Per- centage	Num- ber	Per- centage	Num- ber	Per- centage
A	29	18.01	23	10.31	7	8.86	5	12.20	64	12.70
B	54	33.54	62	27.80	22	27.85	7	17.07	145	28.77
C	64	39.75	101	45.29	44	55.70	21	51.22	230	45.63
D	11	6.84	29	13.01	4	5.06	6	14.63	50	9.92
E	3	1.86	8	3.59	2	2.53	2	4.88	15	2.98
Total ..	161	100.00	223	100.00	79	100.00	41	100.00	504	100.00

of schools found in the different personality ratings.

Relation of personality to achievement of students.--In order to determine whether the public and the private school students in the different personality ratings display differences in College achievement, the number and percentage of students qualifying for College certificates were determined. These data are shown in Table 5.

The proportions of students qualifying for certificates in the various personality ratings do not indicate that there is a relationship between personality traits and College achievement. While Table 5 shows that larger proportions of public than of private school students in the various personality ratings completed the College requirements, the differences between the percentages are not significant.

Socio-Economic Status

Socio-economic status, as determined by the occupation of the father, furnishes another means of comparing the students from public and from private schools. These data, obtained from the Admissions Blanks filled in by every entering student, are contained in Table 6. The classification of occupational groups constructed by G. S. Counts was utilized in the present study.¹ The occupational groups used are as follows: (1) proprietors, (2) professional service, (3) managerial service, (4) commercial service, (5) clerical service, (6) agricultural service, (7) artisan-proprietors, (8) manual labor, and (9) occupation unknown.

Comparison of the percentages of students included in the nine socio-economic groups shows that students from the three types of public schools are economically similar. The fathers of 84.62 per cent of the large public, 82.97 per cent of the medium public, and 72.48 per cent of the small public school students are engaged in the following groups of occupations: professional service, artisan-proprietors, commercial service, manual labor, and managerial service.

This consistency, however, is not so apparent for the students from the four types of private schools. The fathers of 79.87 per cent of the students from University High School and of

¹George Sylvester Counts, The Selective Character of American Secondary Education, pp. 22, 136. Chicago: University of Chicago Press, 1922.

TABLE 5
NUMBER OF PUBLIC AND PRIVATE SECONDARY SCHOOL STUDENTS IN FIVE PERSONALITY GROUPS,
NUMBER AND PERCENTAGE IN EACH GROUP QUALIFYING FOR COLLEGE CERTIFICATES

Personality Group	Public School			Private School			Total	
	Total in Group	Qualifying for Certificates		Total in Group	Qualifying for Certificates		Total in Group	Qualifying for Certificates
		Number	Percentage		Number	Percentage		Number Percentage
A	315 ^a	190	60.70	64	38	59.38	377 ^a	228 60.48
B	573	349	60.91	145	87	60.00	718	436 60.72
C	890 ^c	547	61.46	230	124	53.91	1,120 ^c	671 59.91
D	174 ^b	113	64.94	50	30	60.00	224 ^b	143 63.84
E	63	43	68.25	15	7	46.67	78	50 64.10
Total ..	2,013 ^d	1,242	61.70	504	286	56.75	2,517 ^d	1,528 60.71

^aOne student transferred to another institution for his College work.

^bTwo students transferred to other institutions for their College work.

^cFour students transferred to other institutions for their College work.

^dSeven students transferred to other institutions for their College work.

TABLE 6

DISTRIBUTION OF PERCENTAGES OF PUBLIC AND PRIVATE SECONDARY SCHOOL STUDENTS INCLUDED IN NINE GROUPS, ACCORDING TO THE OCCUPATIONS OF THEIR FATHERS

Occupational Groups	Public School Students							
	Large		Medium		Small		Total	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
1. Proprietors	26	2.02	15	3.50	12	4.65	53	2.68
2. Professional service	266	20.67	114	26.57	65	25.19	445	22.54
3. Managerial service .	168	13.05	64	14.92	27	10.47	259	13.12
4. Commercial service .	209	16.24	64	14.92	26	10.08	299	15.15
5. Clerical service ...	58	4.51	21	4.90	6	2.33	85	4.31
6. Agricultural service	7	.54	9	2.10	25	9.69	41	2.08
7. Artisan-proprietors	253	19.66	56	13.05	28	10.85	337	17.07
8. Manual labor	193	15.00	58	13.51	41	15.89	292	14.80
9. Unknown	107	8.31	28	6.53	28	10.85	163	8.25
Total	1,287	100.00	429	100.00	258	100.00	1,974	100.00

TABLE 6--Continued

Occupational Groups	Private School Students									
	University High School		Independent		Catholic		Other Denominational		Total	
	Num-ber	Per-centage	Num-ber	Per-centage	Num-ber	Per-centage	Num-ber	Per-centage	Num-ber	Per-centage
1. Proprietors	16	10.39	37	17.71	3	4.84	4	9.09	60	12.79
2. Professional service	77	50.00	73	34.93	20	32.26	16	36.36	186	39.66
3. Managerial service .	30	19.48	31	14.83	6	9.68	8	18.18	75	15.99
4. Commercial service .	8	5.19	15	7.18	5	8.05	5	11.36	33	7.04
5. Clerical service ...	2	1.30	5	2.39	..		1	2.27	8	1.71
6. Agricultural service	..		4	1.91	..		..		4	.85
7. Artisan-proprietors	9	5.84	13	6.22	9	14.52	2	4.55	33	7.04
8. Manual labor	4	2.60	13	6.22	13	20.97	6	13.64	36	7.68
9. Unknown	8	5.20	18	8.61	6	9.68	2	4.55	34	7.24
Total	154	100.00	209	100.00	62	100.00	44	100.00	469	100.00

67.44 per cent of the students from independent schools are engaged in the following groups of occupational groups: professional service, proprietors, and managerial service. On the other hand, 67.75 per cent of the fathers of Catholic school students are in the following occupational groups: professional service, manual labor, and artisan-proprietors; and 68.18 per cent of the fathers of students from other denominational schools are engaged in professional service, managerial service, and manual labor.

When all public and all private school students are compared, private school students appear to come from a more highly selective economic group than do public school students.

Age of College Students

The following procedure was utilized in determining the entrance age of students: a student was considered to have attained the age of 16 years, 2 months, if he was born on August 15, 1915, and entered the University in October, 1931; if, however, his birthday was August 16, 1915, he was considered to be 16 years, 1 month, when he matriculated in the University. Calculations of the means and of the medians were made by using one-fourth year groupings.

The mean and median ages of public and of private school students are given in Table 7. Both the mean and the median ages show that students from University High School and from large public schools are the youngest students to enter the College. Students from medium public and from small public schools are not much older than students from large public schools. Independent, other denominational, and Catholic school students are the oldest students to enter the College. According to the means, students from University High School were more than one year younger, and, according to the medians, more than one-half year younger than students from independent, denominational, and Catholic schools. Students from large public schools were, according to the means, more than eight months younger, and, according to the medians, about seven months younger than students from the latter three private schools.

Comparison of the ages of public and of private school students shows that students from both types of schools were of similar ages when they entered the College. Public school students, with a mean age of 18.14 years and a median age of 17.93

years, are slightly (but not significantly) younger than private school students who have a mean age of 18.34 years and a median age of 17.99 years.

TABLE 7

AGE DISTRIBUTION OF STUDENTS FROM PUBLIC HIGH SCHOOLS
OF THREE SIZES, AND PRIVATE SECONDARY SCHOOLS
OF FOUR TYPES, EXPRESSED IN YEARS

Secondary School	Number of Students	Mean	S.D.	Median	Q1	Q3
<u>Public</u>						
Large	1,612	18.01	1.39	17.75	17.31	18.41
Medium	544 ^a	18.34	1.80	18.04	17.52	18.62
Small	332	18.44	1.88	18.16	17.61	18.68
Combined ...	2,488 ^a	18.14	1.57	17.93	17.37	18.50
<u>Private</u>						
University High School	199	17.64	.87	17.58	17.06	18.17
Independent ..	254 ^a	18.69	2.25	18.19	17.69	19.09
Catholic	93	18.70	1.85	18.19	17.73	18.84
Other denomina- tional	53	18.69	3.16	18.19	17.67	18.69
Combined ...	599 ^a	18.34	2.02	17.99	17.44	18.67
Grand total	3,087 ^b	18.18	1.68	17.94	17.38	18.53

^aOne student had no age record.

^bTwo students had no age records.

Relation of age to achievement of students.--Studies made on the relationship between age and academic achievement in college conclude that age appears to be a vital factor in college success.¹

^{1a}E. L. Clark, "Selection of Freshmen at Northwestern College of Liberal Arts," Educational Record, VIII (April, 1927), 128.

^bB. F. Pittenger, The Efficiency of College Students as Related to Age at Entrance and Size of High School, pp. 9 and 112. Sixteenth Yearbook, National Society for the Study of Education, Part II. Bloomington: Public School Publishing Co., 1917.

^cM. E. Sarbaugh, "The Young College Student," School and Society, XL (December, 1934), 823-24.

For this study the students were divided into three age groups, viz., "above normal," "normal," and "below normal" age. Students were considered to be of "normal" age if they were between the ages of 17 years, 4 months, and 18 years, 6 months, when they entered the College. Students 17 years, 3 months, or below were considered to be "below normal" age, and students 18 years, 7 months, or more were considered as "above normal" age.

The numbers of students from public and private schools included in the three age groups, and the number and percentage in each group earning College certificates are presented in Table 8. This table shows that students included in the "below normal" group were the most successful, and students in the "above normal" age group the least successful in completing the College requirements. This is evident in the records of public and of private school students. Whereas 45.79 per cent of the public and 35.33 per cent of the private school students in the "above normal" age group completed their College work, 60.73 per cent of the public and 57.95 per cent of the private school students in the "normal" age group, and 68.43 per cent of the public and 71.54 per cent of the private school students in the "below normal" group qualified for certificates. The trend is unmistakable: academic success, as measured by the completion of the work of the College, is directly related to the age of students.

TABLE 8

NUMBER OF PUBLIC AND PRIVATE SECONDARY SCHOOL STUDENTS IN THREE AGE GROUPS,
NUMBER AND PERCENTAGE IN EACH GROUP QUALIFYING FOR COLLEGE CERTIFICATES

Secondary School	Above Normal			Normal			Below Normal			Total		
	Total in Group	Qualifying for Certificates		Total in Group	Qualifying for Certificates		Total in Group	Qualifying for Certificates		Total in Group	Qualifying for Certificates	
		Num- ber	Per- centage		Num- ber	Per- centage		Num- ber	Per- centage		Num- ber	Per- centage
Public ...	570	261	45.79	1,306 ^b	794	60.73	605 ^a	414	68.43	2,482 ^{c,d}	1,470 ^d	59.23
Private ..	167	59	35.33	302	175	57.95	130	93	71.54	600 ^d	328 ^d	54.67
Combined	737	320	43.42	1,608 ^b	969	60.26	735 ^a	507	68.98	3,082 ^{c,e}	1,798 ^e	58.34

^aTwo students transferred to other institutions for their College work.

^bFive students transferred to other institutions for their College work.

^cSeven students transferred to other institutions for their College work.

^dThis includes one student for whom there was no age record.

^eThis includes two students for whom there were no age records.

CHAPTER IV

COMPARISON OF THE ACADEMIC RECORDS IN THE COLLEGE OF TWO MATCHED GROUPS OF STUDENTS FROM PUBLIC AND FROM PRIVATE SECONDARY SCHOOLS

The present chapter consists of comparisons of various factors in the College life of public and of private school students who were matched accurately in respect to sex, percentile rank on the Psychological Examination of the American Council on Education, and rating on the Personality Schedule.

Length of Residence

In order to determine whether public school students tend to remain in the College for a longer period of time than do private school students, the proportions of students from the two types of schools who withdrew from the College at the end of the various years of residence were obtained.

The data, summarized in Table 9, show that slightly larger percentages of private than of public school students dropped out of the College. The proportions of students dropping out are 34.46 per cent for the public and 41.44 per cent for the private school students.

Some differences are also obtained when the proportions of public and of private school students who dropped out of the College at various periods of residence are compared. Whereas approximately equal percentages of public and of private school students dropped out in the first year of residence (21.14 per cent for public school students and 18.39 per cent for private school students), larger percentages of private than of public school students withdrew in the second year and in more than two years of residence. During the second year of residence 13.95 per cent of the private and 7.82 per cent of the public school students dropped out of the College, and during the third or more years of residence, 9.10 per cent of the private and 5.50 per cent of the public school students withdrew from the College.

TABLE 9

NUMBERS AND PERCENTAGES OF TWO MATCHED GROUPS OF STUDENTS
FROM PUBLIC AND PRIVATE SECONDARY SCHOOLS DROPPING
OUT OF THE COLLEGE, CLASSIFIED ACCORDING TO
THE ACADEMIC YEAR IN WHICH THEY LEFT

Quarters	Public School		Private School		Total	
	Num- ber	Per- centage	Num- ber	Per- centage	Num- ber	Per- centage
Out of residence:						
1-3	100	21.14	87	18.39	187	19.77
4-6	37	7.82	66	13.95	103	10.89
More than 6 ...	26	5.50	43	9.10	69	7.29
Total	163	34.46	196	41.44	359	37.95
In residence ...	310	65.54	277	58.56	587	62.05
Grand total	473	100.00	473	100.00	946	100.00

Rate of Academic Progress

According to the New Plan the College requirements can be completed by the average student in two years (or six quarters) of residence. Students of superior ability, however, can complete the work of the College in less than two years, while students of relatively inferior ability can take more than two years to complete the College requirements.

Moreover, students may take Divisional or Professional School courses during their College residence. Many students anticipate Divisional and Professional School requirements in this way and thus complete the requirements for the Bachelor's degree in less than twelve quarters of residence (the normal length of time).

The following Divisional and Professional School courses were considered as having been satisfactorily completed during College residence: (1) all Divisional and Professional School courses (courses numbered 201-299) which were taken for credit; (2) for students who passed the Divisional or Professional School comprehensive examinations, all courses (either at the Divisional and Professional School level or at the College level) which were included in the comprehensive examinations. For these courses no attention was paid to the course marks.

The percentage of College requirements and the percentage

of Divisional and Professional School requirements successfully completed by public and by private school students are presented in Table 10. Since, theoretically, the average length of time devoted to the College is six quarters (or two years), the requirements completed by the two groups of students for quarters one to six are presented.

The data of Table 10 are based only on the averages for students who were in residence in the specific quarter under consideration. For example, by the end of the fourth quarter of residence, 53.00 per cent of the College requirements were completed by those public school men who were in residence at least four quarters.

According to Table 10 public school students had completed 45.86 per cent and private school students 40.71 per cent of the College requirements within three quarters of residence. The difference, 5.15 per cent, is not significant, for the probable error is 2.25. Within six quarters of residence, however, public school students had completed 89.29 per cent and private school students 82.00 per cent of their College requirements. That the difference, 7.29 per cent, is statistically significant is evidenced by the fact that the probable error is 1.78. In each quarter of residence the percentage of College requirements completed by public school students is consistently higher than that of private school students.

Inspection of Table 10 also shows that the percentage of Divisional and Professional School courses completed by public school students by the end of the third quarter of College residence exceeded that of private school students by .78 per cent (2.06 per cent minus 1.28 per cent), and by the end of the sixth quarter of residence, the percentage of courses completed by public school students exceeded the private school students by 2.60 per cent (11.00 per cent minus 8.40 per cent). While neither of these differences is significant, public school students tend to complete a larger proportion of their Divisional and Professional School requirements than do private school students.

Thus, the data relating to rate of progress indicate that public school students proceed through the College at a faster rate of progress than do private school students.

TABLE 10

PERCENTAGE OF COLLEGE REQUIREMENTS AND PERCENTAGE OF
DIVISIONAL AND PROFESSIONAL SCHOOL COURSES
COMPLETED AT THE END OF VARIOUS QUARTERS
OF COLLEGE RESIDENCE BY TWO MATCHED
GROUPS OF STUDENTS FROM PUBLIC AND
FROM PRIVATE SECONDARY SCHOOLS

End of	Percentage of College Requirements	Percentage of Divisional and Professional School Courses
Public School Students		
1st quarter	2.43	.56
2nd quarter	4.00	1.33
3rd quarter	45.86	2.06
4th quarter	53.00	5.28
5th quarter	55.57	8.33
6th quarter	89.29	11.00
Private School Students		
1st quarter	2.43	.39
2nd quarter	3.86	.89
3rd quarter	40.71	1.28
4th quarter	48.43	3.50
5th quarter	51.29	6.11
6th quarter	82.00	8.40
Total Students		
1st quarter	2.43	.50
2nd quarter	4.00	1.11
3rd quarter	43.29	1.67
4th quarter	50.71	4.39
5th quarter	53.43	7.22
6th quarter	85.71	9.67

Scholastic Achievement

Investigation of scholastic achievement furnishes another means of comparing the academic success of students. Comparison of the scholastic achievement of public and of private school students was accomplished by measuring their performance on the comprehensive examinations (as determined by the grade-point average and by the number of failures).

The grade-point averages were calculated by following the procedures used by the Office of the Registrar of the University of Chicago. The letter-marks with their numerical equivalents are as follows: "A" is 6, "B" is 4, "C" is 2, "D" is 0, and "F" is -2. The following procedures were utilized: (1) a failing mark in the same examination was counted only once; (2) if an examination was repeated, the higher mark was recorded; (3) a non-qualifying mark on the English Qualifying Examination was not counted for examinations failed preceding February, 1933. A mark of "A" or "B" earned in this examination up to February, 1933, was given the usual grade-point credit. This policy was followed because the English Qualifying Examination was a placement test up to February, 1933.

The grade-point averages of public and of private school students in the various College comprehensive examinations are presented in Table 11. This table shows that the grade-point average of public school students is significantly higher than that of private school students. Whereas the grade-point average of public school students is 2.04 points, it is 1.79 points for private school students. The difference, .52 of a point, is significant, for the probable error is .08.

TABLE 11

GRADE-POINT AVERAGES OF TWO MATCHED GROUPS OF STUDENTS
FROM PUBLIC AND FROM PRIVATE SECONDARY SCHOOLS
IN THE COLLEGE COMPREHENSIVE EXAMINATIONS

Examinations	Public School		Private School		Total	
	Mean Grade	S.D.	Mean Grade	S.D.	Mean Grade	S.D.
Biological science	2.30	2.06	1.79	2.08	2.05	2.10
Humanities	2.09	1.92	1.81	1.98	1.96	2.02
Physical science .	2.22	2.02	1.75	2.12	1.99	2.08
Social science ...	2.29	2.04	1.62	2.08	1.96	2.10
English Qualifying Examination	2.46	2.00	2.07	1.96	2.27	1.98
Sequences	2.13	1.96	1.58	1.98	1.86	1.98
Total	2.04	1.79	1.52	1.79	1.78	1.81

The College scholarship of public school students is superior to that of private school students according to the grade-

point average, and, also, according to the grade-points on the individual comprehensive examinations. In the biological science, the physical science, the social science, and the sequence examinations, public school students earned strikingly higher marks than did private school students. The difference between the grade-points of public and of private school students in the biological science examination is .51 of a point, in the physical science examination it is .47 of a point, in the social science examination it is .67 of a point, and in the sequence examinations it is .55 of a point. Since the probable errors are .10, .11, .10, and .10, respectively, the differences are statistically significant. In the humanities examination and in the English Qualifying Examination, the marks of public school students tend to be significantly higher than the marks of private school students. The difference between the performance of public and of private school students in the humanities examination is .28 of a point and in the English Qualifying Examination the difference is .39 of a point. Since the probable errors are .08 and .11, respectively, these differences tend to be significant.

Failures.--Another factor in the problem of scholastic achievement is the number and percentage of students failing examinations.

The following procedures were used in gathering the data on failures: (1) if students received failing marks on the English Qualifying Examination preceding February, 1933, the failure was not counted (this policy was followed because the English Qualifying Examination was a placement test up to February, 1933); (2) all failures were recorded. Students who failed examinations which were later repeated and passed were also included in the tabulations.

The numbers and proportions of students who failed the various comprehensive examinations are given in Table 12.

According to this table larger proportions of private than of public school students failed comprehensive examinations. Of those public and private school students who took one or more comprehensive examinations, 49.77 per cent of the private school students and 36.69 per cent of the public school students failed examinations. The difference between these percentages--13.08 per cent--is significant, for the probable error is 2.22.

Comparison of the percentages of public and of private

TABLE 12

NUMBERS OF TWO MATCHED GROUPS OF STUDENTS FROM PUBLIC AND FROM PRIVATE SECONDARY SCHOOLS TAKING THE VARIOUS COMPREHENSIVE EXAMINATIONS, AND THE NUMBERS AND PERCENTAGES OF STUDENTS FAILING

Examinations	Number of Students Taking Examination	Failures	
		Number	Percentage
Public School Students			
Biological science	412	42	10.19
Humanities	399	50	12.53
Physical science	367	30	8.17
Social science	392	38	9.69
All survey examinations	440	104	23.64
English Qualifying Examination	416	55	13.22
Sequence examinations ...	400	81	20.25
All examinations	447	164	36.69
Private School Students			
Biological science	388	66	17.01
Humanities	387	53	13.70
Physical science	346	55	15.90
Social science	385	79	20.52
All survey examinations	436	152	34.86
English Qualifying Examination	400	68	17.00
Sequence examinations ...	397	108	27.20
All examinations	442	220	49.77
Total Students			
Biological science	800	108	13.50
Humanities	786	103	13.10
Physical science	713	85	11.92
Social science	777	117	15.06
All survey examinations	876	276	31.51
English Qualifying Examination	816	123	15.07
Sequence examinations ...	797	209	26.22
All examinations	889	384	43.19

school students failing the individual comprehensive examinations reveals that strikingly larger proportions of private than of public school students failed the biological science examination, the physical science examination, the social science examination, and the total survey examinations. In the biological science examination the difference between the proportions of private and of public school students receiving failing marks is 6.82 per cent, in the physical science examination it is 7.73 per cent, in the social science examination it is 10.83 per cent, and in the total survey examinations it is 11.22 per cent. The probable errors of 1.63, 1.64, 1.72, and 2.06, respectively, indicate that these differences are significant. Although larger proportions of private than of public school students failed the humanities examination, the English Qualifying Examination, and the sequence examinations, the differences are not significant.

Comparison of University High School Students and of Public High School Students

The question which now arises is concerned with the academic success in the College of University High School students. More specifically, do the students from the University of Chicago High School reflect the same tendencies when compared with public school students as were found for the entire private school group?

In order to insure that the public school students and the University High School students were comparable as to sex, scores on the Personality Schedule, and percentile ranks on the Psychological Examination, the comparisons between the two groups of students are based only on those public school students who were paired with the University High School students.

Length of residence.--Larger proportions of University High School students than of public school students dropped out before the College requirements were fulfilled, for 40.26 per cent of the public school students and 21.42 per cent of the University High School students dropped out of the College. The difference between these proportions, 18.44 per cent, is significant, for the probable error is 3.48.

Rate of academic progress.--According to the percentages of College requirements and of Divisional and Professional School requirements completed at the end of the various quarters of College residence, the rate of progress of University High School

students and of public school students was similar. While, within six quarters of residence, the proportion of College requirements completed by University High School students exceeded that of public school students by 1.00 per cent (87.14 per cent minus 86.14 per cent), the probable error (2.93) indicates that this difference is not significant. Although public school students completed a slightly larger proportion of Divisional and Professional School courses within six quarters of College residence than did University High School students, the difference between the percentages (2.00 per cent) is not significant.

Scholastic achievement.--According to the grade-point averages, the scholastic achievement of University High School students and public school students is similar. While University High School students received a grade-point average of 2.11 points, public school students obtained an average of 1.83 grade-points. The difference between these averages is .28 of a point. Since the probable error is .28, this difference is not significant. Similar facts are found when the mean grade-points earned by University High School students and by public school students on the various comprehensive examinations are compared.

No significant differences in the numbers and proportions of University High School students and of public school students who failed examinations are obtained. The difference between the proportions of University High School students and of public school students failing examinations is .38 per cent. Moreover, similar proportions of University High School students and of public school students failed the individual comprehensive examinations.

CHAPTER V

COMPARISON OF THE ACADEMIC RECORDS IN THE DIVISIONS AND IN THE PROFESSIONAL SCHOOLS OF TWO MATCHED GROUPS OF STUDENTS FROM PUBLIC AND FROM PRIVATE SECONDARY SCHOOLS

The present chapter will consist of comparisons between the academic records of those matched public and private school students who, after qualifying for the College certificate, entered one of the Divisions--Biological Science, Humanities, Physical Science, and Social Science--or one of the Professional Schools--School of Business, Divinity School, Law School, and School of Social Service Administration--of the University of Chicago.

The results of this chapter will be based on the records of 534 students--282 students from public schools and 252 students from private schools. The Divisional and Professional School records of public and of private school students will be compared in respect to the specialization, the scholastic achievement, the rate of progress, and the graduate work of the members of the two groups of students.

One of the first questions which arose was concerned with the proportions of public and of private school students who, after fulfilling the College requirements, continued their academic careers at the University. These data are shown in Table 45.

According to this table similar proportions of the public and of the private school students entered the Divisions and the Professional Schools of the University. The difference between the proportions of private and of public school men entering the Divisions and the Professional Schools is 3.33 per cent (97.63 per cent for private school men minus 94.30 per cent for public school men), between private and public school women it is 2.46 per cent (91.75 per cent for private school women minus 89.29 per cent for public school women), and between private and public school stu-

dents it is 3.03 per cent (95.49 per cent for private school students minus 92.46 per cent for public school students). Thus, while slightly larger proportions of private than of public school students who fulfilled the College requirements entered the Divisions and the Professional Schools of the University, the differences between the proportions of students are not large enough to be significant.

TABLE 45

NUMBERS AND PERCENTAGES OF TWO MATCHED GROUPS OF STUDENTS FROM PUBLIC AND FROM PRIVATE SECONDARY SCHOOLS COMPLETING THE COLLEGE REQUIREMENTS WHO ENTERED THE DIVISIONS AND THE PROFESSIONAL SCHOOLS OF THE UNIVERSITY

Types of Students	Number Completing College Work	Entering Divisions and Professional Schools	
		Number	Percentage
Public school men	193	182	94.30
Private school men	169	165	97.63
Total men	362	347	95.86
Public school women ...	112	100	89.29
Private school women ..	97	89	91.75
Total women	209	189	90.44
Public school students	305	282	92.46
Private school students	266	254	95.49
Total students	571	536	93.87

A larger percentage of the men than of the women, however, tend to remain in the University after completing the work of the College. Whereas 95.86 per cent of the men enrolled in the Divisions and the Professional Schools, 90.44 per cent of the women continued their academic careers at the University. That the difference between these percentages--5.42 per cent--tends to be significant is evidenced by the fact that the probable error is 1.54. Moreover, larger percentages of public school men than of public school women and larger percentages of private school men than of private school women entered one of the Divisions or one of the Professional Schools of the University.

A significant finding is that 536, or 93.87 per cent, of the 571 students who fulfilled the College requirements enrolled in one of the Divisions or Professional Schools. This proportion indicates that students who successfully complete their College requirements tend to continue their academic work at the University of Chicago.

Specialization of Students

In order to determine whether public and private school students specialize in different fields of knowledge, the numbers and percentages of students from the two types of schools who entered the various Divisions and the various Professional Schools of the University were determined. These facts are presented in Table 46.

This table shows that similar proportions of public and of private school students entered the Biological Science Division, the Humanities Division, the Physical Science Division, and the Social Science Division, and that approximately equal proportions of public and of private school students entered the School of Business, the School of Social Service Administration, and the Law School. The proportion of public school students entering the Biological Science Division is 17.02 per cent and for private school students it is 13.39 per cent. Similarly, 17.38 per cent of the public and 17.32 per cent of the private school students entered the Humanities Division, 14.89 per cent of the public and 12.60 per cent of the private school students entered the Physical Science Division, and 19.86 per cent of the public and 23.62 per cent of the private school students entered the Social Science Division. The probable errors indicate that the differences between these proportions--3.63 per cent, .06 per cent, 2.29 per cent, and 3.76 per cent, respectively--are not statistically significant. Moreover, when the percentages of public and of private school students who entered all of the Divisions are compared, the difference between the percentages of public and of private school students is 2.22 per cent (69.15 per cent minus 66.93 per cent). Since the probable error is 2.76, this difference is also not significant. Essentially the same results are obtained when the percentages of public and of private school students who entered the various Professional Schools are compared. While 16.31 per cent of the public and 19.69 per cent of the pri-

TABLE 46

NUMBERS AND PERCENTAGES OF TWO MATCHED GROUPS OF STUDENTS FROM
PUBLIC AND FROM PRIVATE SECONDARY SCHOOLS ENTERING THE
VARIOUS DIVISIONS OR PROFESSIONAL SCHOOLS

Division or Professional School	Public School		Private School		Total	
	Num-ber	Per-centage	Num-ber	Per-centage	Num-ber	Per-centage
Men						
Biological Science	31	17.03	20	12.12	50	14.70
Humanities	15	8.24	15	9.09	30	8.65
Physical Science	38	20.89	24	14.55	62	17.87
Social Science	31	17.03	32	19.39	63	18.15
All Divisions	115	63.19	91	55.15	206	59.37
School of Business	35	19.23	45	27.27	80	23.05
Divinity School	1	.55	..		1	.29
Law School	31	17.03	29	17.58	60	17.29
All Professional Schools	67	36.81	74	44.85	141	40.63
Total	182	100.00	165	100.00	347	100.00
Women						
Biological Science	17	17.00	14	15.73	31	16.40
Humanities	34	34.00	29	32.58	63	33.33
Physical Science	4	4.00	8	8.99	12	6.35
Social Science	35	25.00	28	31.46	53	28.05
All Divisions	80	80.00	79	88.76	159	84.13
School of Business	11	11.00	5	5.62	16	8.47
School of Social Service Administration	7	7.00	3	3.37	10	5.29
Law School	2	2.00	2	2.25	4	2.11
All Professional Schools	20	20.00	10	11.24	30	15.87
Total	100	100.00	89	100.00	189	100.00

TABLE 46--Continued

Division or Professional School	Public School		Private School		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
Total Students						
Biological Science	48	17.02	34	13.39	82	15.30
Humanities	49	17.38	44	17.32	93	17.35
Physical Science	42	14.89	32	12.60	74	13.81
Social Science	56	19.86	60	23.62	116	21.64
All Divisions	195	69.15	170	66.93	365	68.10
School of Business	46	16.31	50	19.69	96	17.90
Divinity School	1	.36	..		1	.19
School of Social Service Administration	7	2.48	3	1.17	10	1.87
Law School	33	11.70	31	12.20	64	11.94
All Professional Schools	87	30.85	84	33.07	171	31.90
Total	282	100.00	254	100.00	536	100.00

vate school students entered the School of Business, 2.48 per cent of the public and 1.17 per cent of the private school students entered the School of Social Service Administration, and 11.70 per cent of the public and 12.20 per cent of the private school students entered the Law School. Only one public school student and no private school students entered the Divinity School.

When the proportions of students entering the Divisions and the Professional Schools are compared, larger proportions of the public and of the private school students entered the Divisions than entered the Professional Schools of the University. The difference between the percentages of public school students entering the Divisions and the Professional Schools is 38.30 per cent (69.15 per cent minus 30.85 per cent) and for private school students it is 33.86 per cent (66.93 per cent minus 33.07 per cent). These differences are significant, for the probable errors are 2.63 and 2.89, respectively.

When public and private school men and when public and

private school women are compared, no significant differences between the specialization of the two groups of students are found.

However, significant differences between the specialization of men and of women are obtained. Whereas approximately equal percentages of men and of women entered the Biological Science Division (16.40 per cent for the women as compared with 14.70 per cent for the men), larger percentages of men than of women entered the Physical Science Division, the School of Business, and the Law School, and larger percentages of women than of men entered the Humanities Division and the Social Science Division. The difference between the proportions of men and of women enrolling in the Physical Science Division is 11.52 per cent (17.87 per cent minus 6.35 per cent), in the School of Business it is 14.58 per cent (23.05 per cent minus 8.47 per cent), and in the Law School it is 15.18 per cent (17.29 per cent minus 2.11 per cent). These differences are significant, for the probable errors are 1.84, 2.05, and 1.54, respectively. On the other hand, the difference between the proportions of women and of men enrolling in the Humanities Division is 24.68 per cent (33.33 per cent minus 8.65 per cent) and in the Social Science Division it is 9.90 per cent (28.05 per cent minus 18.15 per cent). While the probable error of the difference between the percentages of women and of men entering the Humanities Divisions (2.53) indicates that the difference is significant, the probable error of the difference between the percentages of women and of men entering the Social Science Division (2.62) indicates that the difference does not quite equal statistical significance. However, the tendency is for larger percentages of women than of men to enter the Social Science Division.

When the percentages of men and of women entering all of the Divisions and all of the Professional Schools are compared, larger proportions of both men and women entered the Divisions than entered the Professional Schools. Whereas 59.37 per cent of the men and 84.13 per cent of the women entered one of the various Divisions, 40.63 per cent of the men and 15.87 per cent of the women entered one of the Professional Schools. The difference between the proportions of men entering the Divisions and the Professional Schools is 18.74 per cent and for the women it is 68.26 per cent. The probable errors, 2.52 and 2.53, respectively, indicate that these differences are significant. However, larger pro-

portions of the women than of the men enroled in the Divisions and, naturally, larger proportions of the men than of the women enroled in the Professional Schools. The difference between the proportions of women and of men enrolling in the Divisions is 24.76 per cent. Since the probable error is 2.52, this difference is significant.

Similar facts are found when public school men and women and when private school men and women are compared.

Summary.--The data relating to the specialization of students indicate that approximately equal proportions of public and of private school students entered the various Divisions and the various Professional Schools, with larger proportions of public and of private school students entering the Divisions than entered the Professional Schools of the University.

However, larger proportions of men than of women entered the Physical Science Division, the School of Business, and the Law School, and larger proportions of women than of men entered the Humanities Division and the Social Science Division. While the proportions of men and of women entering the Divisions are larger than are the proportions entering the Professional Schools, the interest of the men is more equally divided between the Divisions and the Professional Schools than is the case for the women.

Scholastic Achievement

One means of determining the academic success of public and of private school students in the Divisions and in the Professional Schools of the University is by comparing their scholastic achievement. The following five questions relating to the scholastic achievement of the two groups of students were of particular interest: (1) What proportions of the public and of the private school groups successfully completed the requirements of the Divisions and of the Professional Schools, that is, what proportions of the public and of the private school groups qualified for the Bachelor's degree? (2) Are the two groups of students equal in respect to the numbers and percentages in each group who qualified for the Bachelor's degree with academic honors? (3) Are the grade-point averages of public and of private school students in the various Divisions and Professional Schools approximately equal? (4) Is the relationship between the College achievement and between the Divisional and Professional School achievement

more pronounced for public school students than for private school students? (5) Are the proportions of failures at the Divisional and Professional School level approximately equal for the two groups of students?

The data relating to the numbers and percentages of public and of private school students qualifying for the Bachelor's degree are contained in Table 47. This table shows that equal proportions of public and of private school students qualified for the Bachelor's degree. The proportion of private school students completing the requirements of the Divisions and of the Professional Schools is 82.68 per cent and for public school students it is 79.79 per cent. The difference between these proportions--2.89 per cent--is not significant, for the probable error is 2.27. Similarly, while larger percentages of private school men than of public school men qualified for the Bachelor's degree (the difference between the proportions is 5.45 per cent) and larger percentages of public school women than of private school women successfully completed the Divisional and the Professional School requirements (the difference between the proportions is 1.73 per cent), the probable errors indicate that the differences are not significant.

TABLE 47

NUMBERS AND PERCENTAGES OF TWO MATCHED GROUPS OF STUDENTS
FROM PUBLIC AND FROM PRIVATE SECONDARY SCHOOLS
QUALIFYING FOR THE BACHELOR'S DEGREE

Types of Students	Total Number of Students	Qualifying for Bachelor's Degree	
		Number	Percentage
Public school men	182	139	76.37
Private school men	165	135	81.82
Total men	347	274	78.96
Public school women ...	100	86	86.00
Private school women ..	89	75	84.27
Total women	189	161	85.19
Public school students	282	225	79.79
Private school students	254	210	82.68
Total students	536	435	81.16

When men and women are compared, similar proportions of public school men and women and of private school men and women qualified for the Bachelor's degree. The difference between the proportions of public school men and women completing the Divisional and the Professional School requirements is 9.63 per cent (86.00 per cent for public school women as compared with 76.37 per cent for public school men), for private school men and women it is 2.45 per cent (81.82 per cent for private school men as compared with 84.27 per cent for private school women), and for the total men and the total women it is 6.23 per cent (85.19 per cent for the women as compared with 78.96 per cent for the men). Although a larger proportion of women than of men from both types of schools qualified for the Bachelor's degree, the probable errors--3.16, 3.29, and 2.28, respectively--indicate that none of the differences is significant.

Academic honors.--Attention is directed now to the numbers and percentages of students who qualified for the Bachelor's degree with academic honors (Table 48). Students were considered to have received academic honors when they were elected to Phi Beta Kappa, the honorary scholastic fraternity, or when the phrase "Degree with honors" was recorded on their permanent record sheets which are on file at the Office of the Registrar.

TABLE 48

NUMBERS AND PERCENTAGES OF TWO MATCHED GROUPS OF STUDENTS FROM PUBLIC AND FROM PRIVATE SECONDARY SCHOOLS QUALIFYING FOR THE BACHELOR'S DEGREE WITH ACADEMIC HONORS

Types of Students	Total Number of Students	Receiving Academic Honors	
		Number	Percentage
Public school men	182	25	13.74
Private school men	163	22	13.50
Total men	345	47	13.62
Public school women ...	100	8	8.00
Private school women ..	89	6	6.74
Total women	189	14	7.41
Public school students	282	33	11.70
Private school students	252	28	11.11
Total students	534	61	11.42

According to Table 48 similar proportions of public and of private school students received academic honors. The difference between the proportions of public and of private school students qualifying for the Bachelor's degree with honors is .59 per cent (11.70 per cent for public school students minus 11.11 per cent for private school students). Too, similar proportions of public and of private school men and similar proportions of public and of private school women received academic honors.

When men and women are compared, the proportion of public school men receiving academic honors exceeded public school women by 5.74 per cent (13.74 per cent minus 8.00 per cent) and the proportion of private school men qualifying for the Bachelor's degree with honors exceeded private school women by 6.76 per cent (13.50 per cent minus 6.74 per cent). Neither of these differences, however, is significant, for the probable errors are 2.51 and 2.55, respectively. When the total men and the total women are considered, however, there is some tendency for larger proportions of men than of women to receive academic honors. The difference between the proportions of men and of women who qualified for the Bachelor's degree with honors is 6.21 per cent (13.62 per cent minus 7.41 per cent). That this difference tends to be significant is evidenced by the fact that the probable error is 1.80.

Grade-point averages in the Divisions and in the Professional Schools.--The following two questions concerning Divisional and Professional School grade-point averages arose: (1) Do public school men and women and private school men and women obtain similar Divisional and Professional School grade-point averages? (2) Do the mean grades in the various Divisions and in the various Professional Schools differ markedly for public and for private school students?

The Divisional and the Professional School grade-point averages were obtained by following the same procedures as were utilized for calculating the College grade-point averages, namely, the letter-marks were given the following numerical equivalents: "A" is 6, "B" is 4, "C" is 2, "D" is 0, and "F" is -2. The following procedures were employed in determining the Divisional and the Professional School grade-point averages: (1) if more than one comprehensive examination was required in order to fulfill the Bachelor's degree requirements of the Division or of the Professional School, the marks on the comprehensive examinations were

weighted according to the number of courses included in each comprehensive examination; (2) for those students who did not take comprehensive examinations, but instead took course credits, the averages were obtained by adding up the grade-points received and dividing by the numbers of required courses; (3) marks on elective courses were not included in the calculations, because from the years 1931 to 1934, the only course marks given at the University of Chicago were "S" (Satisfactory) and "U" (Unsatisfactory). Since an "S" gave no indication of the quality of the student's work, the marks on all elective courses were excluded from the calculations.

The grade-point averages of public and of private school students in the various Divisions and Professional Schools are shown in Table 49. Since the numbers of students in the School of Divinity and in the School of Social Service Administration were too small to give sound statistical results, the mean grade-points for students in these two Professional Schools are not given.

According to this table the mean grade-points of public and of private school students in the various Divisions and Professional Schools are similar. The difference between the grade-points of public and of private school students in the Biological Science Division is .06 of a grade-point (3.19 points minus 3.13 points), in the Humanities Division it is .53 of a grade-point (2.74 points minus 2.21 points), in the Physical Science Division it is .45 of a grade-point (2.66 points minus 2.21 points), and in the Social Science Division it is .28 of a grade-point (2.70 points minus 2.42 points). The probable errors of these differences indicate that none of the differences approximates statistical significance. The mean grade-points of public and of private school students in the School of Business and in the Law School are also similar, for the difference between the grade-points of the two groups of students in the School of Business is .36 of a grade-point, and in the Law School it is .21 of a grade-point.

While public school students earned a Divisional grade-point average of 2.66 points, a Professional School grade-point average of 2.30 points, and a total grade-point average of 2.54 points, private school students earned a Divisional grade-point average of 2.63 points, a Professional School grade-point average of 1.92 points, and a total grade-point average of 2.39 points.

TABLE 49

GRADE-POINT AVERAGES OF TWO MATCHED GROUPS OF STUDENTS FROM PUBLIC AND FROM PRIVATE
SECONDARY SCHOOLS IN THE VARIOUS DIVISIONS AND PROFESSIONAL SCHOOLS

	Public School Students			Private School Students			Total		
	Number of Students	Mean Grade	S.D.	Number of Students	Mean Grade	S.D.	Number of Students	Mean Grade	S.D.
Biological science	37	3.13	1.35	32	3.19	1.55	69	3.16	1.45
Humanities	42	2.21	2.47	40	2.74	2.23	82	2.47	2.37
Physical science ..	42	2.66	2.32	25	2.21	1.69	67	2.49	2.11
Social science	54	2.70	1.98	55	2.42	1.78	109	2.56	1.89
All Divisions ...	175	2.66	2.11	152	2.63	1.88	327	2.65	2.01
School of Business	45	1.97	1.54	48	1.61	1.20	93	1.79	1.39
Law School	33	2.49	1.64	30	2.28	1.20	63	2.39	1.45
All Professional Schools	86 ^a	2.30	1.59	81 ^b	1.92	1.26	167 ^c	2.12	1.45
Total	261 ^a	2.54	1.96	233 ^b	2.39	1.72	494 ^c	2.47	1.85

^aThis includes one student from the School of Divinity and seven students from the School of Social Service Administration.

^bThis includes three students from the School of Social Service Administration.

^cThis includes one student from the School of Divinity and ten students from the School of Social Service Administration.

The difference between the Professional School grade-point averages is .03 of a point, between the Professional School grade-point averages it is .53 of a point, and between the total grade-point averages it is .15 of a point. The probable errors-- .15, .15, and .11, respectively, indicate that the differences between the Divisional and between the total grade-point averages of public and of private school students do not approach statistical significance, but public school students tend to earn higher Professional School grade-point averages than do private school students.

When the Divisional and the Professional School grade-point averages of public and of private school men are compared with the averages of public and of private school women (Table 50), no marked differences between the accomplishments of men and of women are found. While the total men earned a Divisional grade-point average of 2.89 points, a Professional School grade-point average of 2.00 points, and a total grade-point average of 2.50 points, the total women earned a Divisional average of 2.36 grade-points, a Professional School average of 2.68 grade-points, and a total grade-point average of 2.41 grade-points. The difference between the Divisional grade-point averages of men and of women is .53 of a point, between the Professional School grade-point averages it is .68 of a point, and between the total grade-point averages it is .09 of a point. The probable errors of the differences-- .15, .18, and .13, respectively--indicate that there is some tendency for the men to receive higher Divisional grade-point averages than the women and for the women to receive higher Professional School grade-point averages than the men, but the total grade-point averages of men and of women are approximately equal.

Although public and private school men received higher Divisional grade-point averages than did public and private school women, public and private school women received higher Professional School grade-point averages than did public and private school men. The differences between the averages of public school men and women and between the averages of private school men and women, however, are not significant.

Relationship between College and Divisional grade-point averages and between College and Professional School grade-point averages.--In order to determine whether there is a relationship between the College and the Divisional performance and between

TABLE 50

COMPARISON OF THE DIVISIONAL AND PROFESSIONAL SCHOOL GRADE-POINT AVERAGES OF PUBLIC SCHOOL MEN AND WOMEN, AND OF PRIVATE SCHOOL MEN AND WOMEN, ACCORDING TO MATCHED GROUPS

Types of Students	All Divisions			All Professional Schools			Total		
	Number of Students	Mean Grade	S.D.	Number of Students	Mean Grade	S.D.	Number of Students	Mean Grade	S.D.
Public school men	100	2.89	2.20	67	2.11	1.63	167	2.58	2.03
Public school women	75	2.36	1.94	19	2.99	1.19	94	2.48	1.83
Total	175	2.66	2.11	86	2.30	1.59	261	2.54	1.96
Private school men	79	2.89	1.94	72	1.91	1.27	151	2.42	1.73
Private school women	73	2.35	1.78	9	2.03	1.11	82	2.32	1.72
Total	152	2.63	1.88	81	1.92	1.26	233	2.39	1.72
Total men	179	2.89	2.09	139	2.00	1.46	318	2.50	1.89
Total women	148	2.36	1.86	28	2.68	1.25	176	2.41	1.73
Total	327	2.65	2.01	167	2.12	1.45	494	2.47	1.85

the College and the Professional School performance of students and whether the relationship is more pronounced for men and women from public schools than for men and women from private schools, simple coefficients of correlation between College and Divisional grade-point averages and between College and Professional School grade-point averages were obtained for the two groups of students. These data are presented in Table 51.

This table shows that there is a positive relationship between College and Divisional grade-point averages and between College and Professional School grade-point averages. While one correlation is .49--the correlation between the College and the Professional School grade-point averages of public school men--the remaining coefficients range in size from .55 to .73. Although three of the correlations are based on a limited number of students (the correlations between the College and the Professional School grade-point averages of public school women, of private school women, and of the total women), a sufficiently large number of students are involved in the remaining correlations to make them reliable.

The coefficients between College and Divisional grade-point averages are .67 for the total men, .62 for the total women, and .66 for the total students. Similarly, the correlations between College and Professional School grade-point averages are .56 for the total men, .68 for the total women, and .59 for the total students. When the grade-point averages of students in the Divisions and in the Professional Schools are combined, the coefficients are .64 for the men, .63 for the women, and .65 for the total students. These data lead to the conclusion that students who receive high grade-point averages in the College tend to receive high grade-point averages in the Divisions and in the Professional Schools, while students who receive low grade-point averages in the College also tend to receive low grade-point averages in the Divisions and in the Professional Schools.

Although the coefficients of private school men and women in general exceed the coefficients of public school men and women, the differences between the correlations for the two groups of students are not statistically significant. The difference between the correlations of College and Divisional grade-point averages for public and private school men is .03 (.69 for public school men minus .66 for private school men), for public and pri-

TABLE 51

COEFFICIENTS OF CORRELATION BETWEEN COLLEGE AND DIVISIONAL GRADE-POINT AVERAGES AND
 BETWEEN COLLEGE AND PROFESSIONAL SCHOOL GRADE-POINT AVERAGES FOR TWO MATCHED
 GROUPS OF STUDENTS FROM PUBLIC AND FROM PRIVATE SECONDARY SCHOOLS

Types of Students	Divisions		Professional Schools			Total	
	Number of Students	r	P.E.	Number of Students	r	P.E.	Number of Students
Public school men	100	.69	.04	67	.49	.06	167
Private school men	79	.66	.04	72	.66	.04	151
Total men	179	.67	.03	139	.56	.04	318
Public school women	75	.56	.05	19	.73	.07	94
Private school women	73	.70	.04	9	.66	.09	82
Total women	148	.62	.03	28	.68	.07	176
Public school students	175	.64	.03	86	.55	.05	261
Private school students	152	.69	.03	81	.66	.04	233
Total students	327	.66	.02	167	.59	.03	494

vate school women it is .14 (.70 for private school women minus .56 for public school women), and for public and private school students it is .05 (.69 for private school students minus .64 for public school students). These differences are not significant, for the probable errors are .06, .06, and .04, respectively.¹ Similarly, the difference between the correlations of College and Professional School grade-point averages for public and private school men is .17 (.66 for private school men minus .49 for public school men), for public and private school women it is .07 (.73 for public school women minus .66 for private school women), and for public and private school students it is .11 (.66 for private school students minus .55 for public school students). That these differences are not significant is indicated by the fact that the probable errors are .07, .11, and .06, respectively.

Failures.--The number and percentage of failures affords a final method of comparing the scholastic achievement of public and of private school students.

In making the study of failures in the Divisions and in the Professional Schools, the following procedures were followed: (1) all failing marks in comprehensive examinations were recorded. Students who failed examinations which were later repeated and passed were also included in the tabulations; (2) since the first comprehensive examination in the School of Business consists of a number of separate parts, students who failed one section of the examination, for example, "Business Psychology," which is three-fourths of the total nine courses included in Examination I, were tabulated as failures.

The numbers and percentages of public and of private school students failing Divisional and Professional School examinations are presented in Table 52. According to this table similar proportions of public and of private school students failed Divisional and Professional School examinations. When the total numbers of students who failed examinations are considered, 28.30 per cent of the public school men, 22.62 per cent of the public school women, and 26.34 per cent of the public school students failed examinations in the Divisions or in the Professional

¹The formula for determining the probable error of the difference between two coefficients of correlation is $P.E.A-B = \sqrt{(P.E.A)^2 + (P.E.B)^2}$. See Holzinger, Statistical Methods for Students in Education, p. 242.

TABLE 52

NUMBERS AND PERCENTAGES OF TWO MATCHED GROUPS OF STUDENTS FROM PUBLIC AND FROM PRIVATE SECONDARY SCHOOLS FAILING EXAMINATIONS IN THE DIVISIONS AND THE PROFESSIONAL SCHOOLS

Types of Students	Divisions			Professional Schools			Total		
	Number of Students Taking Examinations	Failures		Number of Students Taking Examinations	Failures		Number of Students Taking Examinations	Failures	
		Num-ber	Per-centage		Num-ber	Per-centage		Num-ber	Per-centage
Public school men	94	17	18.09	65	28	43.08	159	45	28.30
Private school men	75	14	18.67	71	28	39.44	146	42	28.77
Total men	169	31	18.34	136	56	41.18	305	87	28.52
Public school women ...	69	15	21.74	15	4	26.67	84	19	22.62
Private school women ..	70	14	20.00	8	2	25.00	78	16	20.51
Total women	139	29	20.86	23	6	26.09	162	35	21.60
Public school students	163	32	19.63	80	32	40.00	243	64	26.34
Private school students	145	28	19.31	79	30	37.97	224	58	25.89
Total students	308	60	19.48	159	62	38.99	467	122	26.12

Schools. Likewise, 28.77 per cent of the private school men, 20.51 per cent of the private school women, and 25.89 per cent of the private school students failed one or more examinations. The difference between the proportions of public and of private school men failing examinations is .47 per cent, between public and private school women it is 2.11 per cent, and between public and private school students it is .45 per cent. The probable errors of these differences indicate that the differences are not significant.

When the proportions of public and of private school students failing the Divisional examinations are compared, similar facts are obtained. The difference between the proportions of public and of private school men failing Divisional examinations is .58 per cent (18.67 per cent for private and 18.09 per cent for public school men), for public and private school women it is 1.74 per cent (21.74 per cent for public and 20.00 per cent for private school women), and for public and private school students it is .32 per cent (19.63 per cent for public and 19.31 per cent for private school students).

When failures in the Professional Schools are considered, the difference between the percentages of public and of private school men failing examinations is 3.64 per cent (43.08 per cent for public and 39.44 per cent for private school men), for public and private school women it is 1.67 per cent (26.67 per cent for public and 25.00 per cent for private school women), and for public and private school students it is 2.03 per cent (40.00 per cent for public and 37.97 per cent for private school students).

Thus, the data relating to failures indicate that approximately equal proportions of public and of private school students failed one or more examinations in the Divisions and in the Professional Schools.

The data of Table 52 also show that similar proportions of men and of women failed examinations. Although larger proportions of women than of men failed the Divisional and the Professional School examinations, the differences between the proportions are not significant.

Rate of Progress

One means of measuring the rate of progress of students is by determining the numbers of quarters spent in residence in

the University before the Bachelor's degree requirements were fulfilled. Since, theoretically, four years (or twelve quarters) of residence are required in order to complete the requirements for the Bachelor's degree, the numbers and percentages of public and of private school students who completed the Bachelor's degree requirements in less than twelve quarters, in twelve quarters, and in more than twelve quarters of residence were determined. The data are shown in Table 53.

This table shows that similar proportions of public and of private school students fulfilled the Bachelor's degree requirements in twelve quarters, and in more than twelve quarters of residence, but a larger proportion of public than of private school students completed the requirements in less than twelve quarters of residence. Of the public and the private school students who qualified for the Bachelor's degree, 41.78 per cent of the public school students and 45.71 per cent of the private school students completed the requirements in twelve quarters of residence, and 26.22 per cent of the public school students and 34.29 per cent of the private school students required more than twelve quarters of residence to fulfill the Bachelor's degree requirements. The differences between these proportions--3.93 per cent and 8.07 per cent, respectively--are not significant, for the probable errors are 3.21 and 2.97. However, 32.00 per cent of the public school students and 20.00 per cent of the private school students qualified for the Bachelor's degree in less than twelve quarters of residence in the University. This represents a difference of 12.00 per cent, which is significant, for the probable error is 2.81.

When public school men are compared with private school men, approximately equal proportions of the men from both types of schools completed the requirements within the various periods of residence in the University. Although the proportion of public school men fulfilling the requirements in less than twelve quarters of residence exceeded private school men by 8.00 per cent, and the proportions of private school men fulfilling the requirements in twelve quarters, and in more than twelve quarters of residence exceeded public school men by 1.93 per cent and 6.07 per cent, respectively, these differences are not significant. Likewise, similar proportions of public and of private school women completed the requirements in twelve quarters and in more

TABLE 53

NUMBERS AND PERCENTAGES OF TWO MATCHED GROUPS OF STUDENTS FROM PUBLIC AND FROM PRIVATE SECONDARY SCHOOLS QUALIFYING FOR THE BACHELOR'S DEGREE WITH- IN VARIOUS PERIODS OF RESIDENCE IN THE UNIVERSITY

Qualifying in:	Public School		Private School		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
Men						
Less than 12 quarters ..	42	30.22	30	22.22	72	46.28
Twelve quarters	56	40.29	57	42.22	113	41.24
More than 12 quarters ..	41	29.49	48	35.56	89	32.58
Total	139	100.00	135	100.00	274	100.00
Women						
Less than 12 quarters ..	30	34.88	12	16.00	42	26.08
Twelve quarters	38	44.19	39	52.00	77	47.84
More than 12 quarters ..	18	20.93	24	32.00	42	26.08
Total	86	100.00	75	100.00	161	100.00
Total Students						
Less than 12 quarters ..	72	32.00	42	20.00	114	26.21
Twelve quarters	94	41.78	96	45.71	190	43.68
More than 12 quarters ..	59	26.22	72	34.29	131	30.11
Total	225	100.00	210	100.00	435	100.00

than twelve quarters of residence. A larger proportion of public school women than of private school women, however, completed the requirements in less than twelve quarters of residence. While the percentages of private school women completing the requirements in twelve quarters and in more than twelve quarters of residence exceeded public school women by 7.81 per cent and 11.07 per cent, respectively, these differences are not significant. However, 34.88 per cent of the public school women and 16.00 per cent of the private school women completed the requirements in less than twelve quarters of residence--a difference of 18.88 per cent. This difference is significant, for the probable error is 4.49.

Although a larger proportion of women than of men fulfilled the Bachelor's degree requirements in twelve quarters of residence and a larger proportion of men than of women completed the requirements in more than twelve quarters of residence, the differences between the proportions are not significant. A strikingly larger proportion of men than of women, however, fulfilled the requirements in less than twelve quarters of residence. While 46.28 per cent of the men completed the Bachelor's degree requirements in less than twelve quarters of residence, the comparable percentage for the women is 26.08. This represents a difference of 20.20 per cent, which is significant, for the probable error is 3.31.

Graduate Work

The proportions of students who, after qualifying for the Bachelor's degree, registered as graduate students in the various Divisions and Professional Schools of the University and ultimately received graduate degrees afford a final method of comparing the academic records of public and of private school students.

The numbers and percentages of students from the two types of schools who, having qualified for the Bachelor's degree, registered as graduate students in the University are given in Table 54. This table shows that approximately equal proportions of public and of private school students have graduate records at the University of Chicago. The difference between the proportions of public and of private school men who registered as graduate students is 10.06 per cent (60.43 per cent for public and 50.37 for private school men), for public and private school women it is 2.34 per

cent (47.67 per cent for public and 45.33 per cent for private school women), and for public and private school students it is 6.99 per cent (55.56 per cent for public and 48.57 per cent for private school students). Although the proportions of public school students registering as graduate students are higher than are the proportions of private school students, the differences between the proportions are not significant.

TABLE 54

NUMBERS AND PERCENTAGES OF TWO MATCHED GROUPS OF STUDENTS
FROM PUBLIC AND FROM PRIVATE SECONDARY SCHOOLS
TAKING GRADUATE WORK IN THE UNIVERSITY

Types of Students	Number of Students Qualifying for the Bachelor's Degree	Registering for Graduate Work	
		Number	Percentage
Public school men	139	84	60.43
Private school men	135	68	50.37
Total men	274	152	55.47
Public school women ...	86	41	47.67
Private school women ..	75	34	45.33
Total women	161	75	46.58
Public school students	225	125	55.56
Private school students	210	102	48.57
Total students	435	227	52.18

When men and women are compared, similar proportions of public school men and women and of private school men and women registered as graduate students in the University.

Graduate degrees.---The final problem to be considered is the proportion of students who successfully completed the graduate requirements of the Divisions and of the Professional Schools. The numbers and percentages of public and of private school students who received Master's and Doctor's degrees are presented in Table 55. The "Master's Degree" column of Table 55 includes students who received the degrees of Master of Arts, Master of Business Administration, and Master of Science, and the "Doctor's Degree" column included students who received the degrees of Doctor

TABLE 55

NUMBERS AND PERCENTAGES OF TWO-MATCHED GROUPS OF STUDENTS FROM PUBLIC AND FROM
PRIVATE SECONDARY SCHOOLS RECEIVING MASTER'S AND DOCTOR'S DEGREES

Types of Students	Number of Students Taking Graduate Work	Receiving Graduate Degrees					
		Master's Degree		Doctor's Degree		Total	
		Number	Percentage	Number	Percentage	Number	Percentage
Public school men	84	13	17.86	35	41.67	50	59.52
Private school men	68	13	19.12	24	35.29	37	54.41
Total men	152	28	18.42	59	38.82	87	57.24
Public school women ...	41	8	19.51	3	7.32	11	26.83
Private school women ..	34	6	17.65	4	11.76	10	29.41
Total women	75	14	18.67	7	9.33	21	28.00
Public school students	125	23	18.40	38	30.40	61	48.80
Private school students	102	19	18.63	28	27.45	47	46.08
Total students	227	42	18.50	66	29.07	108	47.57

of Jurisprudence, Doctor of Medicine, and Doctor of Philosophy.

Inspection of Table 55 shows that similar proportions of public and of private school students received graduate degrees from the University of Chicago. Whereas 18.40 per cent of the public school students received Master's degrees and 30.40 per cent received Doctor's degrees, making a total of 48.80 per cent of the public school students receiving graduate degrees, the comparable percentages for private school students are 18.63 per cent, 27.45 per cent, and 46.08 per cent, respectively. While the proportion of private school students receiving Master's degrees exceeded public school students by .23 per cent, the proportion of public school students receiving Doctor's degrees exceeded private school students by 2.95 per cent, and the proportion of public school students receiving graduate degrees exceeded private school students by 2.72 per cent, these differences are not statistically significant.

Similar percentages of men and of women received Master's degrees, but larger percentages of men than of women received Doctor's degrees, and, consequently, larger percentages of men than of women received graduate degrees. While 18.42 per cent of the men and 18.67 per cent of the women received Master's degrees, 38.82 per cent of the men and 9.33 per cent of the women received Doctor's degrees, making a total of 57.24 per cent of the men and 28.00 per cent of the women receiving graduate degrees. The difference between the proportions of men and of women receiving Doctor's degrees is 29.49 per cent and between the proportions of men and of women receiving graduate degrees it is 29.24 per cent. Since the probable errors are 3.27 and 4.20, respectively, these differences are significant.

Summary

Approximately equal proportions of the public and of the private school students who qualified for their College certificates continued their academic careers at the University of Chicago, but larger proportions of public school men than of public school women and larger proportions of private school men than of private school women continued their academic work at the University.

Similar proportions of public and of private school students entered the various Divisions and similar proportions of

students from the two types of schools entered the various Professional Schools of the University. However, larger proportions of public and private school women than of public and private school men entered the Humanities Division and the Social Science Division, and larger proportions of public and private school men than of public and private school women entered the Physical Science Division, the School of Business, and the Law School. While the majority of the women entered the Divisions, the proportions of the men entering the Divisions and the Professional Schools are more equally divided.

The scholastic achievement of public and of private school students is, for the most part, similar, for (1) similar proportions of public and of private school students qualified for the Bachelor's degree; (2) similar proportions of public and of private school students qualified for the degree with academic honors; (3) similar grade-point averages were received by public and by private school students in the various Divisions and Professional Schools, but public school students earned higher Professional School grade-point averages than did private school students; (4) the extent of the relationship between College and Professional School grade-point averages and between College and Divisional grade-point averages are no more pronounced for public than for private school students; and (5) similar proportions of public and of private school students failed examinations in the Divisions and in the Professional Schools of the University. By and large, the scholastic achievement of men and of women is similar.

The only difference between the rate of progress in the University of the public and of the private school students who qualified for the Bachelor's degree is that larger proportions of public than of private school students qualified for the degree in less than twelve quarters of residence. Likewise, larger proportions of men than of women qualified for the degree in less than twelve quarters of residence.

Similar proportions of public and of private school students received graduate degrees from the University. Larger proportions of public and private school men than of public and private school women, however, received Doctor's degrees and, consequently, larger proportions of the men than of the women from the two types of schools received graduate degrees from the University of Chicago.

CHAPTER VI

SUMMARY AND CONCLUSIONS

The main purpose of this study has been the comparison of the academic success in the University of Chicago of graduates of public and of private secondary schools. Two distinct types of investigations have been reported. One section consisted of an analysis of the entire student population entering the College as Freshmen during the years 1931 to 1935, inclusive. The other section reported an intensive analysis of certain features of academic life for matched groups of public and of private school students.

The 3,089 students who entered the College during the years 1931 to 1935 were classified according to the type of school where the secondary training was received, namely, large public schools, medium public schools, small public schools, University of Chicago High School, independent schools, Catholic schools, and other denominational schools. The following characteristics of the students from these seven types of schools were compared: score on the Psychological Examination of the American Council on Education; rating on the Thurstone "Personality Schedule"; socioeconomic status; and age at entrance to the College. The relation of these characteristics to the College success of students was also presented.

For the intensive study of the matched public and private school students the University records of 473 public school students and of a similar number of private school students who matriculated in the College during the years 1931 to 1934 were compared. The students from the two types of schools were matched accurately in respect to sex, rank on the Psychological Examination of the American Council on Education, and rating on the Thurstone "Personality Schedule." The following factors in the academic careers of the matched groups of students were compared: the high school background, the length of residence, the rate of academic progress, the scholastic achievement, and the fields of specialization.

Summary of the Evidence

The specific findings of this investigation are as follows:

I. The study of the entire student population entering the College reveals the following facts:

A. The majority of the students--80.60 per cent--entering the College received their secondary school training in public schools, with more than one-half of the total students coming from large public schools. A larger proportion of men than of women entered the College.

1. University High School students were more successful in completing the work of the College than were students from the other types of secondary schools. Next in order were students from large, medium, and small public schools, and from independent schools. Least successful were students from Catholic schools. Larger proportions of men than of women satisfactorily completed the requirements of the College.

B. The facts relating to the characteristics, as defined here, of public and of private school students are as follows:

1. According to the raw scores on the Psychological Examination, the mental ability of public and of private school students is similar. Students from University High School and from medium public schools, however, received the highest scores, while students from Catholic schools received the lowest score. The mental ability of men is superior to that of women.

a. The mental ability of students, as judged by the Psychological Examination, is directly related to College achievement, for larger proportions of students receiving high psychological scores than of students receiving low psychological scores completed the requirements of the College.

2. Public and private school students show no essential differences in emotional make-up, as determined by the Personality Schedule, for similar proportions of students from the various types of public and of private schools are found in the "emotionally well-adjusted" ratings and in the "emotionally maladjusted" ratings. Women are more inclined than men to display neurotic tendencies.

a. There appears to be no relation between personality ratings and College achievement, for approximately equal proportions of students displaying neurotic tendencies and of emotionally well-adjusted students qualified for their certificates.

3. Private school students are from a more highly selective economic group than are public school students. Whereas the majority of the fathers of public school students are engaged in the professional service, the commercial service, the artisan-proprietors, and the manual labor occupational groups, the majority of the fathers of private school students are engaged in the following occupational groups: proprietors, professional service, and managerial service. The fathers of the majority of University High School students and of independent school students are engaged in the foregoing occupational groups. The socio-economic status of students from Catholic schools and from other denominational schools is more like that of students from the public schools than of students from University High School or from independent schools.

a. There is no relation between socio-economic status, as determined by the occupation of the fathers, and College achievement.

4. Students entering the College during the years 1931 to 1935 are of similar ages, but private school students are slightly older than are public school students and men are older than women. Students from University High School and from large public schools are about one year younger than are Catholic school students who are the oldest students to enter the College.

a. Age at entrance to the College and College achievement are directly related, for students of "below normal" age were more successful in completing the College requirements than were students of "normal" or "above normal" age and students whose ages were "above normal" were less successful in completing the requirements than were students of "normal" or "below normal" age.

II. Findings relating to the College records of matched groups of students from public and from private secondary schools are as follows:

A. Findings in reference to high school background are the following:

1. The pattern of high school units offered for entrance to the College is different for public than for private school students. Private school students offered more units than public school students in the foreign languages and in mathematics, while public school students offered more units than private school students in the physical sciences other than mathematics.
2. The majority of the entrance units are in the fields of humanities and of physical sciences. For many students, especially those from private schools, from one-half to three-fourths of the total units offered for entrance are in the field of humanities.
3. The size of the correlations between the high school and the College marks of public and of private school students in the four fields of knowledge--biological science, humanities, physical science, and social science--indicates that high school marks in specific subject fields are of little value for predicting the College marks of public or of private school students.
4. Public and private school men offered more units than public and private school women in mathematics and in other physical sciences, while public and private school women offered more units than public and private school men in foreign languages.

B. Findings in reference to length of residence are the following:

1. Public school students persist in the College to a greater extent than do private school students. Although the average length of residence of public and of private school students was similar (approximately six quarters), larger proportions of private than of public school students withdrew during the second year and in more than two years of College residence.
2. Public and private school men remain in the College for a longer length of time than do public and private school women. Not only was the average length of residence for the men higher than the average for the women, but larger proportions of the women than of the men dropped out of the College by the end of the various years of residence.

3. Withdrawal from the College is qualitative, for the public and the private school students who remained in residence received higher psychological scores and earned higher grade-point averages for their work in the College than did the public and the private school students who dropped out of the College.

C. Findings relating to the rate of academic progress are the following:

1. Public school students complete the College requirements at a faster rate of progress than do private school students.
 - a. By the end of the sixth quarter of residence public school students had completed 89.29 per cent and private school students 82.00 per cent of their College requirements. Moreover, public school students completed a larger proportion of their College requirements at the end of each quarter of residence than did private school students.
 - b. A larger proportion of public than of private school students successfully completed the College requirements within six quarters of residence.
2. While the proportions of Divisional and Professional School courses completed by the two groups of students during College residence are similar, public school students completed a slightly larger proportion of the Divisional and Professional School requirements at the end of each quarter of College residence than did private school students.
3. The rate of progress of public and private school men tends to be faster than that of public and private school women.
 - a. Public and private school men and public and private school women completed similar proportions of their College requirements at the end of the various quarters of residence, but larger proportions of the men than of the women from the two types of schools successfully fulfilled the College requirements within six quarters of residence.
 - b. Public and private school men completed slightly larger proportions of the Divisional and Professional School requirements than did public and private school women.
4. The more capable students complete the College requirements within two years of residence. The public and the private school students who fulfilled the College requirements

within six quarters of residence received higher psychological scores and earned higher grade-point averages for their work in the College than did the public and the private school students who fulfilled the requirements in more than two years of residence.

D. Findings in reference to scholastic achievement are the following:

1. The scholastic achievement of public school students is strikingly superior to that of private school students.

- a. Not only did public school students receive a higher grade-point average than private school students, but public school students received strikingly higher grade-points than did private school students on the biological science examination, on the physical science examination, on the social science examination, and on the sequence examinations. Moreover, the grade-points of public school students on the humanities examination and on the English Qualifying Examination tend to be significantly higher than the grade-points of private school students.

- b. Private school students failed a larger proportion of the comprehensive examinations than did public school students. Students from private schools received a larger proportion of failing marks than did public school students in the biological science examination, in the social science examination, in the total survey examinations, and in the sequence examinations.

- c. Larger proportions of private than of public school students failed at least one examination. Larger proportions of private than of public school students failed the biological science examination, the physical science examination, the social science examination, and the total survey examinations.

- d. Larger proportions of private than of public school students were dismissed from the College, but similar proportions of public and of private school students received honorable mention for their work in the College.

2. By and large, the scholastic achievement of public and private school men and of public and private school women is similar.

3. The public and the private school students who failed no

examinations, who voluntarily withdrew from the College, and who received honorable mention for their work in the College received higher psychological scores and earned higher grade-point averages than did the public and the private school students who failed examinations, who were dismissed from the College, and who did not earn academic honors for their College work.

III. Findings in reference to the College records of University High School students and of their matched public school students are as follows:

A. University High School students remain in the College for a longer period of time than do public school students. While University High School students remained in residence for 6.62 quarters, public school students were in residence for 5.75 quarters. Moreover, a larger proportion of public school students than of University High School students withdrew before completing the requirements of the College.

B. The rate of progress of University High School students and of public school students is similar.

1. University High School students and public school students completed similar proportions of the College requirements by the end of the various quarters of residence.

2. Similar proportions of University High School students and of public school students fulfilled the seven College requirements within six quarters of residence.

3. The students from both types of schools completed similar proportions of the Divisional and the Professional School requirements by the end of the various quarters of residence.

C. There are no essential differences between the scholastic achievement of University High School students and of public school students.

1. The grade-point averages for the two groups of students were similar, as were the grade-points on the individual comprehensive examinations.

2. The proportions of comprehensive examinations failed by University High School students and by public school students were approximately equal, as were the proportions of students who failed examinations.

IV. Findings in reference to the Divisional and the Professional School records of matched groups of public and of private school

students are as follows:

A. The facts relating to the specialization of students are the following:

1. Students from public and from private schools specialize in the same fields of knowledge. Similar proportions of public and of private school students entered the various Divisions and similar proportions of students from both types of schools entered the various Professional Schools of the University.

2. Men and women specialize in different fields of knowledge. Larger percentages of public and private school men than of public and private school women entered the Physical Science Division, the School of Business, and the Law School, and larger percentages of public and private school women than of public and private school men entered the Humanities Division and the Social Science Division.

B. Findings in reference to scholastic achievement are as follows:

1. The scholastic achievement of public and of private school students is approximately equal.

a. Similar proportions of students from both types of schools qualified for the Bachelor's degree and similar proportions qualified for the degree with honors.

b. Public and private school students earned similar grade-point averages in the various Divisions and in the various Professional Schools.

c. By means of the correlation technique it was shown that public and private school students who received high College grade-point averages received high Divisional and Professional School grade-point averages, while the students from both types of schools who received low College grade-point averages also received low Divisional and Professional School grade-point averages.

d. Similar proportions of public and of private school students failed examinations at the Divisional and the Professional School level.

2. The scholastic achievement of the men and of the women from the two types of schools is, for the most part, similar.

C. Findings in reference to rate of progress are the following:

1. The rate of progress toward fulfilling the Bachelor's de-

gree requirements is similar for public and for private school students. Larger percentages of public than of private school students, however, completed the Bachelor's degree requirements in less than twelve quarters of residence in the University.

2. Likewise, the rate of progress of men and of women is similar, but men are more inclined than women to complete the Bachelor's degree requirements in less than twelve quarters of residence in the University.

D. Findings in respect to graduate records are the following:

1. Similar proportions of public and of private school students received graduate degrees.

2. Larger proportions of the men than of the women from the two types of schools received graduate degrees.

Conclusions and Significance of the Study

While this investigation did not study intensively the success of graduates of the four types of private schools and of the three classifications of public schools, the evidence suggests that size of public school and type of private school from which students graduate do not play an important part in determining the success of their students in College. While students from all three types of public schools completed the College requirements equally well, students from University High School surpassed students from the other types of private schools and students from Catholic schools were markedly inferior to students from the other types of private schools. However, the mental potentialities, according to the psychological examination, of Catholic school students were inferior to the students from the other types of private schools, while the mental potentialities of University High School students were markedly superior to students from the other types of private schools. Since scores on the psychological examination are related to satisfactory completion of College work, the differences in the scholastic ability of the students from the various types of schools are probably more responsible for the differences in the proportions of students completing their College work than are the types of public and of private schools where the secondary training was received.

The evidence which is based upon matched public and private school students points quite conclusively to the fact that,

contrary to expectations, public secondary schools perform the college-preparatory function fully as well as, if not better than, do private secondary schools. The level of performance at the University of Chicago of students from public secondary schools is either approximately equal to, or is markedly superior to, the performance of students from private secondary schools. Reference is made here to the following facts: (1) public school students remained in residence in the College for a longer period of time than did private school students; (2) public school students completed the College requirements at a faster rate of progress than did private school students; (3) public school students strikingly surpassed private school students in respect to scholastic achievement in the College; and (4) the performance of public school students at the Divisional and the Professional School level was approximately equal to the performance of private school students. Thus, at the College level the academic success of public school students was markedly superior to that of private school students and at the Divisional and the Professional School level the academic success of the two groups of students was approximately equal. In none of the comparisons presented in this investigation was the performance of private school students found to be superior to that of public school students.

While the study of the entire student body showed that University High School students were more successful in completing the College requirements than were public school students, University High School students and public school students perform equally well in the College when the two groups of students are matched in respect to sex, psychological rank, and personality rating. Although University High School students are not responsible for the inferior scholastic achievement in the College of the private school group, they also do not surpass the achievement of public school students. Thus, even though the University High School is connected with the University of Chicago, and, theoretically, should prepare its students for successful work in the College, public secondary schools seem to perform the college-preparatory function as well as does the University of Chicago High School.

The contention that the college-preparatory function of secondary education is more adequately performed by private than by public secondary schools is not substantiated by the perform-

ance of the students from the two types of schools at the University of Chicago. In fact, the evidence of this investigation supports the view that private secondary education is merely duplicating one of the functions of public secondary education, and suggests that it is not even duplicating this function efficiently.

The performance of students at the University of Chicago, if similar to the performance of students at other institutions of higher learning, should challenge educators to consider the advisability of redefining the objectives of private secondary education. If other objective studies substantiate the results of the present investigation and prove conclusively that public schools perform the college-preparatory function as well as do private schools,¹ educators are confronted with the problem of determining what functions of secondary education are peculiar to private schools. This is one way that private secondary education can better justify its continued existence in our educational system.

¹While the present study substantiates the findings of L. V. Koos relating to the performance of public and of private school students at the University of Minnesota (Koos, Private and Public Secondary Education, pp. 104-39), these two investigations merely throw some light on the effectiveness of the college-preparatory function of the two types of secondary schools and should not be considered as having solved the problem.

